A Wellcome Change?

UK researchers are debating the merits of the new Wellcome Trust Investigator Awards. With concerns over public funding cuts for research, some question the timing of the charity's change in funding strategy.

The birth of Henry Solomon Wellcome in 1853 in a remote part of Wisconsin was ultimately a significant event for British science. The Wellcome Trust charity that resulted from the will he drew up in 1932 funds a significant portion of biomedical research in the UK. This heavyweight funder, with an endowment of £13 billion, spends about £600 million each year on research in the UK; this is comparable to the £720 million spent annually by the UK's Medical Research Council (MRC), the government arm of biomedical research. In contrast, in the US, the nonprofit philanthropic Howard Hughes Medical Institute (HHMI; http://www.hhmi.org/) spent $730 million on research in 2009, a fraction of the $28 billion spent by the US government-funded National Institutes of Health. Given that the Wellcome Trust is a major funder of research in the UK and Ireland, scientists paid attention when the charity announced late last year that it was changing its funding strategy (http://www.wellcome.ac.uk/).

The Trust plans to end its traditional project and program grants this summer and to divert the money into new Investigator Awards that will be flexible in length and scale and will focus on individual scientists rather than projects. "Our awards will be anything from four years to seven, and we'll provide people with a scale of support to really tackle important questions," says Mark Walport, Director of the Wellcome Trust. But he is adamant that this is an evolution, not a revolution. "It is really taking our fellowship model and extending it to people who have salaried jobs," he says. The Trust's current fellowships fund scientists not directly employed by research institutions or universities. "It has always been a bit illogical that the second you had a salaried position in a university, rather than having that very personal support [in fellowships], people go on to project grants and programme grants," says Walport. He stresses that the change must also be seen in the context of the Trust's overall portfolio. "Essentially we will have four types of grant. We will have our fellowships and Investigator Awards, our technology translation awards and our Strategic Awards." The new Investigator Awards will fund both new investigators and senior investigators with a maximum of £425,000 per year for up to 7 years for each award. Applications will be accepted from October 1st this year, with the first awards to be announced in May 2011.

But the Wellcome's change in strategy comes as the UK and Ireland face economic woes, budget deficits, and government cuts. The UK general election last month gave the country a coalition government of Conservatives and Liberal Democrats. Before the election, the Conservatives had stressed the importance of innovation, rather than basic science, and their shadow science minister had said major cuts in the science budget would be inevitable. Meanwhile, the Liberal Democrats had promised no cuts in science spending in their first year. However, with the European Commission warning that the UK budget deficit will reach 12% of GDP this year, topping the list of the 27 EU countries, the UK's new coalition government has promised to reduce the deficit by cutting spending and not raising taxes, with £6 billion in cuts to non-front-line services within the financial year 2010–2011. Although certain areas such as health may be spared cuts, it is doubtful that science will be so lucky. "People are worried that there may be a significant lack of growth in science funding coming and we are in for a very tough time," says Ray Dolan, Director of the Wellcome Trust Centre for Neuroimaging at University College, London. Walport is positive about the UK as an environment for medical research but says, "clearly there are economic threats to research, but hopefully the new government will recognise that the future prosperity of the UK depends on the fruits of our intellectual endeavours. Around the world, countries that are good at science are increasing their investment, not cutting it."

Meanwhile Irish scientists, who are eligible to apply for Wellcome Trust support, are already facing steep cuts as the government has begun to tackle its ballooning deficit by cutting €10 billion from across all government sectors. Science Foundation Ireland (SFI) (http://www.sfi.ie/), a government-funded organization that in 2009 handed out €170 million in research grants, was dealt an 11% cut in its allocation for 2010. SFI admits that it will be tough to retain the infrastructure and people it has built up since its launch a decade ago. Ireland's Health Research Board, which spends €50 million on research annually, is shifting its emphasis from basic biomedical research to clinical and health services research, placing further demands on SFI and the Wellcome Trust.

Given the economic uncertainty, the Trust's change in funding strategy has met with a mixed reception. Susan Greenfield, professor of pharmacology at the University of Oxford, applauds the decision to fund by person rather than project. "However, I do have serious worries about abolishing project grants altogether," says Greenfield, who recalls the independence she achieved when she received her first small project grant. Patricia Johnson at Dublin City University, who holds a Wellcome project grant, says these grants will be missed and is doubtful her present work would have been funded under the new regime. "If someone doesn't have an exemplary publication record, it doesn't mean that their idea isn't valid and important and useful," she says. Her concern is not

"about the scheme itself, but the phasing out of project grants." Greenfield also points out that "You are taking a huge gamble if you concentrate funds onto fewer people that they are indeed the right people at the right time … I'm also a bit concerned about backing winners because you don't know who the winners necessarily are in research," she adds. People can fade or be late developers or have just one amazing idea.

The best way for the Trust to tackle ambitious problems in medical research is to pick exciting scientists, says Adrian Bird at the Wellcome Trust Centre for Cell Biology in Edinburgh, who is also a Trust governor. "The total number of individuals receiving Wellcome Trust funding in the UK is likely to fall," he admits, but the Trust's job "is not to necessarily maintain the health of the scientific enterprise in the UK; its mission is more specific. It wants to fund research that is going to advance human health and it will choose whatever way is most likely to succeed."

Weighing up the pros and cons of the new scheme, Ian Robertson of Trinity College Dublin says: "It will be more difficult for some people to get grants, but the chance of getting major breakthroughs by allowing people to pursue a more flexible program of research probably outweighs the disadvantages." One potential downside, however, is that larger research groups will gobble up more of the pie. Robertson agrees: "That is a disadvantage, but that process has been happening under the existing system, and I'm not sure it is going to change that." The most extreme view is that the move will help phase out smaller labs altogether. One researcher in a smaller lab commented: "If small labs are phased out, even the larger will suffer, even though they will get the money. It is against the spirit of collaboration and support." However, Bird says the idea that large groups will be favored is just false. "The assumption that science gets bigger and bigger in order to solve larger problems is not necessarily correct. I personally don't believe there is any need for the size of groups to increase."

Kingston Mills at Trinity College Dublin sees the new Investigator Awards as a strategic move. "They are looking at what is happening in the States and seeing that the US is still ahead of Europe in terms of research output. There is a feeling that by giving more funding to a smaller number of good people the returns will be greater." The move also dovetails with Wellcome's recently announced Strategic Plan for 2010 to 2020, which acknowledges that scientific discoveries take time, so researchers should be given the time and resources to find answers. The Strategic Plan will focus Wellcome's resources on five major research areas—genetics and genomics, the brain, infectious disease, aging and chronic disease, and nutrition and the environment.

Some say that the Trust's switch from projects to people mirrors the successful model of HHMI in the US. "It is very much following the Howard Hughes model of extreme excellence, giving scientists the freedom and flexibility to explore the best ideas," says one senior UK scientist, who asked not to be named. "The Howard Hughes is the icing on the cake of a very well funded enterprise in American research, but in the UK, the Wellcome Trust has been, together with the MRC, the bulwark keeping biomedical research alive." He says his institution is likely to do better under the new scheme, and it might be the right way to get the best science done. But he adds: "There's a concern I hear expressed as 'To those that hath, shall be given.'" Some accuse the Trust of elitism, saying that this switch to HHMI's model reflects a desire for Nobel prizes, but the Trust denies this. And HHMI's President, Robert Tjian, points out that it is through their selection process that they ended up with Nobel laureates. "We had no idea they were going to be the elite. We are looking for people who are doing great science," he says. "We tend to go for people, quite frankly, because it is easier to judge people than it is to judge projects."

But there are advantages to Wellcome's new scheme in the form of the application itself, which is much shorter than more traditional grant applications. "We will be asking people to articulate a vision, a place they want to go, how they will get there and why they are the ones who will be successful," explains Alan Schafer, the Trust's Director of Science Funding. Flexibility and vision are the watchwords. "We want people to come in and say this is how much it is going to cost and this is how long it will take," he says. "What do you want to accomplish overall? Sure it has to be substantiated, but don't tell me the restriction enzyme."

An Expert Review Group, comprising scientists from the UK and overseas, will review proposals and select candidates, whose applications will then be peer reviewed; a shortlist of applicants will be invited for an interview. The personal interview has found favor with many. "I would love the opportunity to talk to somebody face to face. Sometimes you get reviews back and don't have any recourse. Perhaps you didn't put something clearly enough or maybe a reviewer picks up on something slight that you could easily defend," says Johnson. And Schafer notes that, given his experience on fellowship committees, it is not simply people who interview well who are successful, there has to be substance too. Dolan is confident that the interview will not be an obstacle for young researchers: A younger investigator "might feel intimidated by the fact that they don't have a long track record, but any funding system has to be cognizant of that. These are the young people who are going to be the future backbone of British science," he says.

Indeed the Trust is anxious to reassure young scientists that they will not be disadvantaged by the switch from projects to people. "We will very deliberately have investigator grants for people within the first few years of their salaried positions, because it is important to compare apples with apples," explains Walport. Schafer concurs: "We have a concern that this program could either be perceived or end up favoring people who are later in their career, who have the *Cell*, *Science*, *Nature* papers," he says. "We love those sorts of researchers. However, we also strongly want to be funding people to reach their potential instead of continuing to build on their achievements." The Trust will keep in place its 4 year PhD studentship programmes, as well as its 4 year fellowships for people within a year of completing their PhD.

Walport feels that reaction to the change overall has been favorable. "There is a certain amount of excitement; there's a certain amount of apprehension. But the best scientists recognize

that this is going to offer them tremendous opportunities," says Walport. "One of the defects of the project grant system is that people are expected to know what they are going to discover. If you know what you are going to discover, it is probably not worth discovering," he notes. "When you talk to the scientific community and scientists individually, they complain about the short-term nature of the project grant, about the fact that it limits ambition, and yet, on the other hand, people are remarkably conservative about the funding models." Peter Donnelly, Director of the Wellcome Trust Centre for Human Genetics in Oxford, says of the Trust's change in direction that it is an interesting move but is more circumspect regarding its outcome. "Funding good people with more secure and longer term funding makes a lot of sense," he says. "Exactly what the consequences will be in practice is a bit hard to predict."

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